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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,991	01/16/2002	Mark A. Carlson	P5764	9173

45774 7590 03/24/2005	**EXAMINER**	
KUDIRKA & JOBSE, LLP	HOLLAR, ANDREA B	
ONE STATE STREET, SUITE 800		
BOSTON, MA 02109	ART UNIT	PAPER NUMBER
	2142	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/051,991		CARLSON ET AL.	
	Examiner		Art Unit	
	Andrea Hollar		2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2002*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☒ Claim(s) *17 and 48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *10/10/02, 4/19/04*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 122, 129m, 528, 908, 914, and 916. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because reference number 200 is used to reference both "Bronze Quality Service Config. Policy" and "Network". A reference number may only reference one item. Additionally, in fig. 16b, reference number 1052 has no arrow associating it with any item in the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet"

or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: the reference number 129n on page 12, line 23 does not appear in the drawings.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: reference number 200 refers to "network" on page 17, line 9 and also to "service configuration policy" on page 18, lines 5 and 9. A reference number may only be used to reference one item.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: the reference number 204 found on page 17, line 9 and throughout pages 17 through 21 is not shown in the drawings.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: reference number 816 found on page 31, line 26 is not shown in the drawings.

Appropriate correction is required.

Claim Objections

Claims 17 and 48 are objected to because of the following informalities: It is believed that "fo" is a typographical error and "of" was intended. The claim will be examined as such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 5, 10, 14, 16, 19, 21, 23, 26, 28, 30, 36, 41, 45, and 47 are rejected under 35

U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly

claim the subject matter which applicant regards as the invention.

Claims 3, 19, and 26 recite the limitation "the at least one application". There is

insufficient antecedent basis for this limitation in the claims.

Claim 3 recites the limitation "the at least one application host". There is insufficient

antecedent basis for this limitation in the claim.

Claims 15 and 46 recite the limitation "determining the additional resource allocation".

There is insufficient antecedent basis for this limitation in the claim.

Claims 16 and 47 recite the limitation "the determined additional resource allocation".

There is insufficient antecedent basis for this limitation in the claim.

Claims 5, 10, 14, 21, 23, 28, 30, 36, 41, and 45 make use of the word "if". Use of the

word "if" in the claims renders the claim indefinite because it is unclear what applicant claims as

the invention. For the purposes of examination, it will be assumed that these "if" statements

evaluate as false.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section
122(b), by another filed in the United States before the invention by the applicant for
patent or (2) a patent granted on an application for patent by another filed in the United
States before the invention by the applicant for patent, except that an international
application filed under the treaty defined in section 351(a) shall have the effects for
purposes of this subsection of an application filed in the United States only if the
international application designated the United States and was published under Article
21(2) of such treaty in the English language.

Claims 1, 2, 4, 7, 16, 18, 20, 25, 27, 32, 33, 35, 38, and 47 are rejected under 35

U.S.C. 102(e) as being anticipated by Fuller (2003/0055972).

With respect to claim 1, Fuller discloses a method for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

determining values for the service level parameters (par. 37, lines 5-7);

determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

determining a modification of one at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

With respect to claim 2, Fuller discloses that the monitored service level parameter comprises one of a performance parameter and an availability level of at least one system resource (par. 34, lines 1-2).

With respect to claim 4, Fuller discloses that the modification of resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

With respect to claim 7, Fuller discloses writing to a log information indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, line 13).

With respect to claim 16, Fuller discloses invoking an operation to implement the determined additional resource allocation (par. 36, lines 21-23).

With respect to claim 18, Fuller discloses a system for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

means for measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

means for determining values for the service level parameters (par. 37, lines 5-7);

means for determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

means for indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

means for determining a modification of at least one resource deployment or configuration if the value for the service level parameter for the resource does not satisfy the predetermined service level thresholds (par. 36, lines 18-23).

With respect to claim 20, Fuller discloses that the modification of resource deployment comprises at least one of adding additional instances of the resource and modifying a configuration of the resource (par. 61, lines 9-14).

With respect to claim 25, Fuller discloses a system for managing multiple resources in a system including at least one host (par. 30, lines 1-4), network (par. 28, lines 4-12), and a storage space comprised of at least one storage system that each host is capable of accessing over the network (par. 27, line 5), comprising:

a processing unit (par. 27, line 20);

a computer readable medium accessible to the processing unit (par. 27, line 21);

program code embedded in the computer readable medium executed by the processing unit to perform:

(i) measuring and monitoring a plurality of service level parameters indicating a state of the resources in the system (par. 36, lines 7-10);

(ii) determining values for the service level parameters (par. 37, lines 5-7);

(iii) determining whether the service level parameter values satisfy predetermined service level thresholds (par. 37, lines 7-11);

(iv) indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, lines 13-22); and

(v) determining a modification of at least one resource deployment or
configuration if the value for the service level parameter for the resource does not satisfy
the predetermined service level thresholds (par. 36, lines 18-23).

With respect to claim 27, Fuller discloses that the program code for
determining the modification of the resource deployment comprises at least one of adding
additional instances of the resource and modifying a configuration of the resource (par. 61, lines
9-14).

With respect to claim 32, Fuller discloses an article of manufacture including code for
managing multiple resources in a system including at least one host (par. 30, lines 1-4), network
(par. 28, lines 4-12), and a storage space comprised of at least one storage system that each
host is capable of accessing over the network (par. 27, line 5), wherein the code is capable of
causing operations comprising:

measuring and monitoring a plurality of service level parameters indicating a state of the
resources in the system (par. 36, lines 7-10);

determining values for the service level parameters (par. 37, lines 5-7);

determining whether the service level parameter values satisfy predetermined service
level thresholds (par. 37, lines 7-11);

indicating whether the service level parameter values satisfy the predetermined service
thresholds (par. 37, lines 13-22); and

determining a modification of one at least one resource deployment or configuration if the
value for the service level parameter for the resource does not satisfy the predetermined service
level thresholds (par. 36, lines 18-23).

With respect to claim 33, Fuller discloses that the monitored service level parameter
comprises one of a performance parameter and an availability level of at least one system
resource (par. 34, lines 1-2).

With respect to claim 35, Fuller discloses that modification of resource deployment
comprises at least one of adding additional instances of the resource and modifying a
configuration of the resource (par. 61, lines 9-14).

With respect to claim 38, Fuller discloses writing to a log information indicating whether the service level parameter values satisfy the predetermined service thresholds (par. 37, line 13).

With respect to claim 47, Fuller disclose invoking an operation to implement the determined additional resource allocation (par. 36, lines 21-23).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 19, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller (2003/0055972) in view of Mabuchi (2002/0069377), Kamada (6,381,637), and Ellis (5,504,858).

Fuller does not expressly disclose that the service level performance parameters that are monitored are members of a set of performance parameters comprising: a downtime during which the at least one application is unable to access the storage space; a number of times the at least one application host was unable to access the storage space; a throughput in terms of bytes per second transferred between the at least one host and the storage; and an I/O transaction rate.

Mabuchi teaches that it is known to monitor the amount of time that a storage device is defective (par. 14, lines 5-6). Kamada teaches that it is known to monitor the number of times a storage space is not able to be accessed (col. 15, lines 61-62). Ellis teaches that it is known to monitor request rate and data rate (col. 1, lines 37-40).

Fuller, Mabuchi, Kamada, and Ellis are all analogous art because they are all from the same field of endeavor of networking systems.

At the time of invention, it would have been obvious to use downtime during which the at least one application is unable to access the storage space, the number of times the at least one application host was unable to access the storage space, throughput in terms of bytes per second transferred between the at least one host and the storage, and I/O transaction rate as SLA attributes in Fuller's invention because they are elements of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller with Mabuchi, Kamada, and Ellis for the benefit of monitoring system performance to obtain the inventions as specified in claims 3, 19, 26, and 34.

Claims 5, 6, 21, 28, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Ellis.

With respect to claims 5, 21, 28, and 36, Fuller discloses generating a message indicating that the service level parameters do not satisfy the service level attributes (par. 37, lines 17-22).

Fuller does not expressly disclose that a time period is associated with one of the monitored service parameters and determining a time during which the value of the service level parameter associated with the time period does not satisfy the predetermined service level threshold.

Ellis teaches that it is known to monitor the data rate in a read/write operation and that data rate is the amount of user data that can be transferred per second by the I/O subsystem (col. 1, lines 38-40).

Fuller and Ellis are both analogous art because they are both from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to use Ellis' data rate as one of Fuller's service level attributes because data rate is an element of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller with Ellis for the benefit of

monitoring system performance to obtain the inventions as specified in claims 5, 21, 28, and 36.

With respect to claims 6 and 37, Fuller further discloses that a customer contracts with a

service provider to provide the system at agreed upon service level parameters (par. 36, lines 10-

13), further comprising:

transmitting a service message to the service provider after determining that the value of

the service level parameter does not satisfy the predetermined service level (par. 37, lines 11-13);

and

transmitting the message indicating failure of the value of the service level parameter for

the time period to both the customer (par. 37, lines 17-22) and the service provider (par. 37, lines

11-13).

Claims 8, 10, 12, 17, 22, 23, 29, 30, 39, 41, 43, and 48 are rejected under 35 U.S.C.

103(a) as being unpatentable over Fuller in view of Golasky (2003/0074599).

With respect to claims 8, 22, 29, and 39, Fuller discloses analyzing operating

characteristics to determine whether specified thresholds are met (par. 37, lines 7-11), however

Fuller does not expressly disclose determining the resource that contributes to the failure of

satisfying the threshold, determining whether any additional instances of the determined at least

one resource that contributes to the failure of the service level parameter is available; and

allocating at least one additional instance of the determined at least one resource to the system.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3) and that it is

possible to locate a replacement resource (par. 25, lines 3-4) and to utilize that resource (par. 25,

lines 4-5).

Fuller and Golasky are analogous art because they are both from the same field of

endeavor of data storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to

modify Fuller to allow it to determine that a resource failure has caused the failure of a SLA

requirement and to locate an additional resource and replace the failed resource with the located

resource. The motivation for doing so would have been to enable Fuller's invention to be able to meet the customer SLA requirements in the event of a failure (Fuller par. 36, lines 20-21).

Therefore it would have been obvious to combine Fuller with Golasky for the benefit of meeting SLA requirements in the event of a failure to obtain the inventions as specified in claims 8, 22, 29, and 39.

With respect to claims 10, 23, 30, and 41, Fuller further discloses:

means for determining characteristics of access to the resources by applications operating at the service level; and

means for indicating that the service level is not sufficient due to a change in the access characteristics (par. 37, lines 17-22).

With respect to claims 12 and 43, Fuller further discloses that the predetermined access characteristics are specified in a service level agreement that indicates the thresholds for the service level parameter values (par. 36, lines 10-15).

With respect to claims 17 and 48, Fuller discloses that customers can specify that they want data storage redundancy through a backup system (par. 47, line 3 – par. 48, line 2). Fuller also teaches indicating whether the component failure causes the resource deployment to fall below the predetermined redundancy threshold (par. 37, lines 17-22).

Fuller does not expressly disclose detecting a failure of one component and determining whether the component failure causes the resource deployment to fall below the predetermined redundancy of resources.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3).

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller to allow it to determine that a backup resource has failed so that the customer can be notified that the backup cannot occur. If Fuller's backup resource can be monitored for failure and a failure is detected, as taught by Golasky, it is obvious that Fuller's customer's request for redundancy cannot be fulfilled as specified.

Therefore it would have been obvious to one of ordinary skill in the art to combine Fuller and Golasky for the benefit of indicating that a backup cannot occur to obtain the inventions as specified in claims 17 and 48.

Claims 9 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Golasky as applied to claims 8 and 39 above, and further in view of Ellis.

Fuller and Golasky do not expressly disclose that analyzing the resource deployment comprises performing a bottleneck analysis.

Ellis teaches that accessing a storage device can cause a bottleneck (col. 1, lines 59-61).

Fuller, Golasky, and Ellis are analogous art because they are all from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller and Golasky to include a bottleneck analysis in the process of determining a failure. The motivation for doing so would have been to find disk failures that are the result of bottleneck conditions.

Therefore it would have been obvious to combine Ellis with Fuller and Golasky for the benefit of identifying bottleneck conditions to obtain the inventions as specified in claims 9 and 40.

Claims 11 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Golasky as applied to claims 10 and 41 above, and further in view of Ellis, Napolitano (6,301,605), and Yamamoto (5,956,750).

Fuller and Golasky do not expressly disclose that the access characteristics include read/write ratio, input/output (I/O) size, and percentage of access being either sequential or random.

Ellis discloses that it is known that read/write ratio can be measured (col. 1, lines 40-41). Napolitano discloses that file size can be monitored in I/O transactions (col. 11, lines 58-59).

Yamamoto discloses that the ratio between sequential accesses and random accesses to a disk

device can be measured (col. 5, lines 58-61).

Fuller, Golasky, Ellis, Napolitano, and Yamamoto are all analogous art because they are

all from the same field of endeavor of storage systems.

At the time of invention, it would have been obvious to use read/write ratio, input/output

size, and percentage of access being either sequential or random as SLA attributes in Fuller's

invention because they are elements of system performance (Fuller par. 36, lines 13-14).

Therefore it would have been obvious to combine Fuller and Golasky with Ellis,

Napolitano, and Yamamoto for the benefit of monitoring system performance to obtain the

inventions as specified in claims 11 and 42.

Claims 13, 24, 31, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Fuller in view of Toyouchi (6,006,251).

Fuller does not expressly disclose that requests from applications using a higher priority

service receive higher priority than requests from applications operating at a lower priority

service, and that determining the modification of the at least one resource deployment further

comprises increasing the priority associated with the service level whose service level parameter

values fail to satisfy the predetermined service level thresholds.

Toyouchi teaches that requests can be divided into priority groups wherein one group

receives higher priority than another. Toyouchi also teaches that requests can change priority

due to a relationship with a parameter (col. 11, lines 25-45).

Fuller and Toyouchi are analogous art because they are both from the same field of

endeavor of networked systems.

At the time of invention it would have been obvious to allow Fuller's invention to

accommodate storage accesses of different priority levels and that the storage accesses could

change priority levels if a level of system performance specified in the SLA was not being

reached. The motivation for doing so would have been to ensure that the SLA requirements are

met.

Therefore it would have been obvious to combine Fuller with Toyouchi for the benefit of meeting SLA requirements to obtain the invention as specified in claims 13, 24, 31, and 44.

Claims 14 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Toyouchi as applied to claims 13 and 44 above, and further in view of Golasky.

Fuller discloses analyzing operating characteristics to determine whether specified thresholds are met (par. 37, lines 7-11), however Fuller and Toyouchi do not expressly disclose analyzing the resource deployment to determine at least one resource that contributes to the failure of the service level parameter values to satisfy the thresholds; determining whether any additional instances of the determined at least one resource that contributes to the failure of the service level parameter is available; and allocating at least one additional instance of the determined at least one resource to the system.

Golasky teaches to determine that a resource has failed (par. 25, lines 1-3) and that it is possible to locate a replacement resource (par. 25, lines 3-4) and to utilize that resource (par. 25, lines 4-5).

Fuller, Toyouchi and Golasky are analogous art because they are all from the same field of endeavor of networking systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to modify Fuller to allow it to determine that a resource failure has caused the failure of a SLA requirement and to locate an additional resource and replace the failed resource with the located resource. The motivation for doing so would have been to enable Fuller's invention to be able to meet the customer SLA requirements in the event of a failure (Fuller par. 36, lines 20-21).

Therefore it would have been obvious to combine Fuller and Toyouchi with Golasky for the benefit of meeting SLA requirements in the event of a failure to obtain the inventions as specified in claims 14 and 45.

Claims 15 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Yoshimoto (2001/0044907).

Fuller discloses determining at least one of host adaptor, network, and storage resources to add to the configuration (par. 61, line 13).

Fuller does not expressly disclose that one service level parameter value indicates a time throughput of input/output operations between the at least one host and the storage space has been below a throughput threshold.

Yoshimoto teaches to monitor input/output operations of a disk device to determine a time during which the throughput is at a threshold of zero (par. 6, lines 9-11).

Fuller and Yoshimoto are analogous art because they are both from the same field of endeavor of storage systems.

At the time of invention it would have been obvious to one of ordinary skill in the art to allow Fuller's invention to monitor the time that the throughput in or out of a storage device is at a threshold of zero, as taught by Yoshimoto, in order to enable Fuller's invention to power down a storage device in order to save energy when it is not in use for a period of time (par. 4, lines 12-17).

Therefore it would have been obvious to combine Fuller with Yoshimoto for the benefit of energy savings to obtain the inventions as specified in claims 15 and 46.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Andrea Hollar whose telephone number is 571-272-5862. The examiner

can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jack Harvey can be reached on 571-272-3896. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system,

see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ABH
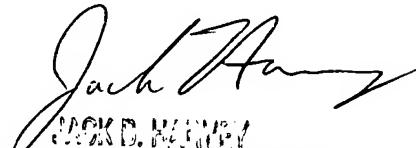
JACK D. HARVEY
SUPERVISORY PATENT EXAMINER